## CLAIMS

## What is claimed is:

1 1.	A method for accessing an instance of a recreatable object in a shorter-duration
GUST 7	memory based on a reference located in a longer-duration memory, wherein the
~ (3h) (	shorter-duration memory is associated with a call, the method comprising the steps of
4	locating, within the shorter-duration memory, a context structure associated with the
5	call;
6	locating an XREF pointers array based on data cached within the context structure;
. 7	determining whether the XREF pointers array includes a pointer associated with said
8	reference; and
9	if the XREF pointers array includes a pointer associated with said reference, then
10	following said pointer to locate said instance within said shorter-duration
11	memory.
1 2.	The method of Claim 1 wherein the step of locating an XREF pointers array based on
2	data cached within the context structure comprises the steps of:
3	determining a hash code associated with a memory page in which the XREF is
4	located;
5	using at least a portion of the hash code as an index to locate an array entry within an
6	array stored within the context structure; and
7	if said array entry contains a pointer, then following said pointer stored in said array
8	entry to locate said XREF pointers array.

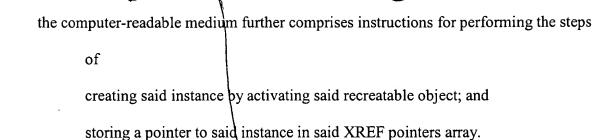
1	3.	The method of Claim 2 wherein:
2		the array is a power-of-two array; and
3		the portion of said hash code that is used as said index includes a particular number of
4		bits of said hash code.
1	4.	The method of Claim 1 wherein:
2		the XREF pointers array does not include a pointer associated with said reference; and
3		the method further comprises the steps of
4	١	creating said instance by activating said recreatable object; and
5()	1	storing a pointer to said instance in said XREF pointers array.
1	5.	The method of Claim 2 wherein:
2		if said array entry does not contain a pointer, then creating said instance by activating
3		said recreatable object; and
4		storing a pointer to said instance in said array entry.
1	6.	A method for accessing an instance of a recreatable object in shorter-duration memory
2		based on a reference located in a longer-duration memory, wherein the shorter-
3		duration memory is associated with a call, the method comprising the steps of:
4		when a class is activated, generating, within said shorter-duration memory, a class
5		object associated with the class;
6		storing, within said class object, data for locating instances of recreatable objects
7		associated with said class;

8		to dereference said reference, performing the steps of
9		determining that said reference is associated with said class; and
10		using said data within said class object to locate said instance of said
11		recreatable object.
1	7.	The method of Claim 6 wherein the step of storing, within said class object, data for
2		locating instances is performed by storing, within said class object, a pointer to an
3		XREF pointers array.
1	8.	The method of Claim 7 wherein the step of using said data within object to locate said
2		instance includes the steps of:
3		determining whether the XREF pointers array includes a pointer associated with said
4		reference;
5		if the XREF pointers array includes a pointer associated with said reference, then
6		following said pointer to locate said instance within said shorter-duration
7		memory.
1	9.	The method of Claim 8 wherein:
2		the XREF pointers array does not include a pointer associated with said reference; and
3		the method further comprises the steps of
4		creating said instance by activating said recreatable object; and
5		storing a pointer to said instance in said XREF pointers array.

1	10.	A computer-readable medium carrying instructions for accessing an instance of a
2		recreatable object in a shorter-duration memory based on a reference located in a
3		longer-duration memory, wherein the shorter-duration memory is associated with a
4		call, the computer-readable medium comprising instructions for performing the steps
5		of:
6		locating, within the shorter-duration memory, a context structure associated with the
7		call;
- 8		locating an XREF pointers array based on data cached within the context structure;
9	\	determining whether the XREF pointers array includes a pointer associated with said
10	/i/	reference; and
11	) <b>V</b>	if the XREF pointers array includes a pointer associated with said reference, then
12		following said pointer to locate said instance within said shorter-duration
13		memory.
1	11.	The computer-readable medium of Claim 10 wherein the step of locating an XREF
2		pointers array based on data cached within the context structure comprises the steps
3		of:
4		determining a hash code associated with a memory page in which the XREF is
5		located;
6		using at least a portion of the hash code as an index to locate an array entry within an
7		array stored within the context structure; and
8		if said array entry contains a pointer, then following said pointer stored in said array
9		entry to locate said XREF pointers array.

1	12.	The computer-readable medium of Claim 11 wherein:
2		the array is a power-of-two array; and
3		the portion of said hash code that is used as said index includes a particular number of
4		bits of said hash code.
1	13.	The computer-readable medium of Claim 10 wherein:
2		the XREF pointers array does not include a pointer associated with said reference; and
3		the computer-readable medium further comprises instructions for performing the steps
4		of
5	, )	creating said instance by activating said recreatable object; and
6		storing a pointer to said instance in said XREF pointers array.
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1	14.	The computer-readable medium of Claim 11 further comprising instructions for
2		performing the steps of:
3		if said array entry does not contain a pointer, then creating said instance by activating
4		said recreatable object; and
5		storing a pointer to said instance in said array entry.
1	15.	A computer-readable medium carrying instructions for accessing an instance of a
2		recreatable object in shorter-duration memory based on a reference located in a
3		longer-duration memory, wherein the shorter-duration memory is associated with a
4		call, the computer-readable medium comprising instructions for performing the steps
5		of:

6		when a class is activated, generating, within said shorter-duration memory, a class
7		object associated with the class;
8		storing, within said class object, data for locating instances of recreatable objects
9		associated with said class;
10		to dereference said reference, performing the steps of
11		determining that said reference is associated with said class; and
12		using said data within said class object to locate said instance of said
13		recreatable object.
1	16.	The computer-readable medium of Claim 15 wherein the step of storing, within said
2		class object, data for locating instances is performed by storing, within said class
3		object, a pointer to an XREF pointers array.
1	17.	The computer-readable medium of Claim 16 wherein the step of using said data
2		within object to locate said instance includes the steps of:
3		determining whether the XREF pointers array includes a pointer associated with said
4		reference;
5		if the XREF pointers array includes a pointer associated with said reference, then
6		following said pointer to locate said instance within said shorter-duration
7		memory.
1	18.	The computer-readable medium of Claim 17 wherein:
2		the XREF pointers array does not include a pointer associated with said reference; and



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